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THE POLISH CHEMICAL INDUSTRY, 1947 - 1948

THE CHEMICAL INDUSTRY IN 1947

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The tasks assigned to the chemical industry in the Three-Year Economic Plan were very arduous, and those falling in the first stage, 1947, were especially difficult. The 1947 production quota alone, set at 561,500,000 zlotys at 1947 prices, over 40 percent higher than 1946 production, gives some indication of the effort which the chemical industry had to make to carry out the plan. By 23 December 1947 the plan was carried out and on 31 December of that year it was exceeded by 2.4 percent. That 2.4 percent represents production valued at 700 million current zlotys in excess of the plan, given to the nation in the form of various commodities, primarily serving to develop other branches of industry.

Factories

Between 1946 and 1947 the organization and scope of industrial production under the jurisdiction of the Central Administration of the Chemical Industry did not undergo any major change. The Association of Applied Chemistry was liquidated and some of its smaller factories were removed from the Central Administration. Additional factories came under the jurisdiction of the Central Administration with the inclusion of the Association of the Projectile and Explosive Material Industry. The Association of the Organic and Pharmaceutical Industry was divided into two associations: organic chemistry and pharmaceuticals.

At the end of 1947, the Central Administration of the Chemical Industry consisted of 171 establishments. Of these, only 24 are inactive or in the process of reconstruction.

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The following table gives a breakdown of plants under the Central Administration of the Chemical Industry, according to the number of employees, as of the end of the third quarter 1947.

Classification According to No of Workers	No of Plants	Workers in Active Plants		Avg No per Plant	Salaried Workers	
		Number	Percent		Number	Percent
Up to 50	46	1,345	3.3	29	358	26.9
50-200	58	6,014	14.6	104	1,156	19.2
200-500	18	6,303	15.3	350	979	15.5
500-1,000	15	10,663	25.8	711	1,546	14.5
Over 1,000	10	16,858	41.0	1,686	1,951	11.6
Total active plants	147	41,183	100.0	280	5,990	14.5
Inactive plants	24	2,131	--	89	--	--
Total	171	43,314	--	253	--	--

This table shows the small share of small establishments in the total employment of the chemical industry, and also confirms the fact that the ratio of salaried workers to the total number employed varies in inverse proportion with the size of the plant.

In line with their small share in employment, small enterprises have an insignificant share in the total value of production of the Central Administration of the Chemical Industry, as illustrated in the following table:

Classification According to No of Workers	No of Plants	Value of Production in 2d Qu 47 In 1,000 zlotys at 1947 Prices	Percent
To 50	46	6,202.5	4.6
50-200	58	21,196.7	15.7
200-500	18	23,250.2	17.2
500-1,000	15	33,496.4	24.8
Over 1,000	10	51,044.0	37.7
Total	147	135,189.8	100.0

In a breakdown according to age, more than two thirds of the factories have been in existence more than 20 years. These include all the key factories, such as those producing nitrogen compounds, soda, products distilled from tar, etc.

Production

The development of the chemical industry has been rapid, as a result of intensive activation and reconstruction of plants, the organization of new production, and increase in the productivity of equipment and labor. During the past 3 years no major disturbances have occurred to slow down this development.

Value of Production (in 1,000 zlotys at 1937 prices)

		Increase over Preceding Qu (%)
3d quarter 1945	42,188	--
4th " "	52,102	23.5
1st " 1946	76,158	46.2

Table (Continued)

		Increase over Preceding Qu (%)
2d quarter 1946	94,442	24.0
3d " "	112,245	10.9
4th " "	114,788	2.5
1st " 1947	121,586	5.9
2d " "	135,203	11.2
3d " "	150,536	13.4
4th " "	166,312	10.5

Total production for 1947 amounted to 575,216,000 zlotys [sic] (at 1937 prices), or 102.4 percent of planned production. For individual products, there were plus and minus deviations in carrying out the plan. Among the more important products, only 70-73 percent of planned production was achieved in soda, sulfuric acid, and superphosphate. This was brought about by a combination of circumstances: soda -- slow deliveries of apparatus, especially from abroad, and an acute shortage of experts; sulfuric acid -- difficulties in importing pyrites superphosphate -- a shortage of sulfuric acid.

The deficiencies were more than compensated by production in excess of the plan in other products, specifically: pigments, 130.0 percent of plan; calcium cyanamid, 104.1; nitrogen fertilizer; $NH_4NO_3 + CaCO_2$, 101.5; nitrate of ammonia, 141.3; tires, 135.1; composition soles, 142,8; zinc white, 117.2; work shoes, 274.0; oxygen, 121.0; and acetylene, 113.0 percent.

The following table gives 1946 and 1947 production figures for the more important products, with the percentage increase over 1946.

Product	1946 (tons)	1947 (tons)	Percentage Increase
Sulfuric acid	31,968	47,950	50
Crude soda	116,267	143,792	23
Caustic soda	15,365	30,708	100
Hydrochloric acid	3,031	3,840	27
Glauber's salt	5,423	7,730	43
Chlorinated lime	1,558	3,540	127
Bichromates (sodium dichromate and potassium dichromate)	151	450	198
Pigments	1,569	2,040	30
Oxygen (1,000 cu m)	4,529	6,320	40
Acetylene	1,074	1,240	15
Superphosphates	159,050	182,970	14
Calcium cyanamide	99,189	120,810	22
Nitrogen fertilizer: $NH_4NO_3 + CaCO_2$	37,061	67,400	82
Nitrate of ammonia	6,129	9,290	51
Soaps of all kinds	4,255	6,860	61
Glycerine	53	117	121
Varnishes	1,191	2,690	126
Ultramarine	149	520	248
Zinc white	4,750	7,610	60
Prepared tar and road tar	37,284	53,590	44
Carbon electrodes	4,688	5,360	14
Tires for cars and motorcycles	511	1,380	170
Inner tubes for cars and motorcycles	62	210	239
Work shoes	412	1,090	164
Composition soles	1,090	1,990	83
Belts and conveyers	341	975	186

[For comparison, the following figures from Chemicky Obzor, Prague, 30 September 1949, are given. The 1946 production figures were identical.

Product	1947 (tons)	Percentage Increase Over 1946
Sulfuric acid	47,662	49
Crude soda	141,244	21
Caustic soda	30,601	99
Hydrochloric acid	3,840	27
Glauber's salt	7,627	41
Chlorinated lime	3,540	127
Bichromates	477	216
Pigments	2,082	32
Oxygen	6,320	39
Acetylene	1,276	19
Superphosphates	182,976	15
Calcium cyanamide	120,812	22
Nitrogen fertilizer	67,400	82
Nitrate of ammonia	8,477	38
Soap	7,054	66
Glycerine	117	121
Varnishes	2,690	126
Ultramarine	515	245
Zinc white	7,739	63
Tar	53,590	44
Carbon electrodes	5,360	147

It is noteworthy that for a number of commodities, 1947 production exceeded prewar production, as follows:

Product	Production (tons) 1937	1947	Index of 1947 Production (1937 = 100)
Pigments	2,002	2,082	104.0
Calcium cyanamide	68,100	120,810	177.4
Nitrate of ammonia	2,900	8,480	292.4
Tires	2,478	2,770	111.8
Composition soles	410	1,990	487.8
Superphosphate	163,450	182,970	112.0
Crude soda	129,948	143,792	111.0
Caustic soda	21,865	30,708	140.4

In some sectors, productive capacity increased faster than the supply of raw materials (for example, in superphosphates); this caused many difficulties in the course of the year, especially in imports, but there was some relief by the end of the year.

Employment

The following table shows the total number of persons employed in plants and associations:

	1st Qu	2d Qu	3d Qu
Total	40,696	42,679	45,632
Plants	39,637	41,517	44,344
Associations	1,059	1,142	1,288
Percentage employed in associations	2.6	2.7	2.8

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Total employment in plants and associations in the second quarter increased 4.8 percent over the preceding quarter; employment in the third quarter increased 6.6 percent over the second quarter. Employment in the fourth quarter, on the whole, remained at the same level as in the third quarter.

Considering the fact that the associations have in practice taken over some of the operations of the plants themselves, in addition to the purely co-ordinating and management functions, the number employed in the associations is a relatively small percentage of total employment in the industry.

The Plan for Economic Reconstruction called for an average employment of 44,246 persons in plants of the chemical industry for 1947. The actual employment averaged 42,354 workers. Between January and December employment increased 16 percent, while production in that period increased 44 percent.

The table below shows actual employment according to activity:

Class of Workers	1st Qu Number	1st Qu Percent	2d Qu Number	2d Qu Percent	3d Qu Number	3d Qu Percent
Wage earners employed in						
Direct production	14,641	36.8	14,754	35.6	15,845	35.7
Supplementary divisions	7,743	19.5	7,971	19.2	8,685	19.6
Service divisions	5,629	14.2	4,719	14.4	5,147	11.6
Investment projects	4,155	10.5	5,813	14.0	6,281	14.2
Other than in production	508	1.3	1,011	2.4	1,019	2.3
Apprentices	1,196	3.0	1,128	2.7	966	2.2
Salaried workers						
Technical engineers	2,053	5.2	2,211	5.3	2,391	5.4
Office workers	3,712	9.4	3,910	9.4	4,010	9.0
Total	39,637	100.0	41,517	100.0	44,344	100.0

Engineering and technical personnel in plants and associations average barely 5.8 percent of total employment, which is lower than the prewar ratio. In some branches of the chemical industry the size of technical staffs is dangerously low (for example, 4.4 percent in the rubber industry and 5.4 percent in the inorganic and artificial fertilizer industries).

Labor productivity

The index of labor productivity, i.e., the value of production in base-year prices, divided by the number of man-hours of the producing group, shows an upward tendency from January on, as follows: January 6.73, February 7.39, March 7.80, April 8.56, May 8.29, June 9.01, July 8.33, August 8.80, September 8.98, October 8.82, and November 9.08.

The average index of productivity for 1946 was 7.46. In 1947 the index was lower only during the winter months of January and February.

Shown below is the average monthly value of production per worker:

Month	In 1937 Zlotys	In Current Zlotys
Jan	1,078	27,620
Feb	1,088	29,780
Mar	1,264	35,180
Apr	1,285	51,970
May	1,250	50,810

Table (Continued)

Month	In 1937 Zlotys	In Current Zlotys
Jun	1,332	59,900
Jul	1,251	61,653
Aug	1,360	69,327
Sep	1,421	76,871
Oct	1,464	77,206
Nov	1,425	73,151

In calculating the value of production per worker, at 1937 prices and at current prices, the group of workers engaged in investment projects was excluded in view of the fact that the effects of their work will not be directly visible in the current increment of production. The index of productivity calculated in this manner shows a steady upward trend and already exceeds the prewar standard (the average value of productirn /per worker/ in the Polish chemical industry in 1937 amounted to 1,139 zlotys).

The share of labor costs in the value of production is as follows:

	1st Qu	2d Qu	3d Qu
Value of production at current prices (in million zlotys)	3,272.8	5,688.2	7,769.9
Labor costs: cash payments, payments in kind, and social security (in million zlotys)	799.0	943.5	1,124.2
Share of labor costs in value of production (%)	24.41	16.59	14.47
1937 share of labor costs in value of production (%)	18.25	18.25	18.25

As a result of the increase in prices of industrial products in the first and second quarters, the share of labor costs in the value of production decreased from 24.41 percent in the first quarter to 16.59 percent in the second quarter and to 14.47 percent in the third quarter, dropping even below the prewar norms (18.25 percent in 1937).

The achievements of the chemical industry do not end here. Results have been noteworthy in other departments, such as the economy program, safety precautions and sanitary working conditions, social activities, vocational training, and agricultural economy.

From the foregoing discussion, the chemical industry has much to be proud of.

At the beginning of 1948, there is every guarantee that during this year not only will the production plan be realized, but labor productivity and quality of production will improve further.

INVESTMENTS IN THE CHEMICAL INDUSTRY

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Cen Adm of Chem Industry

For the period 1946 - 1948, investment credits allotted to the chemical industry are progressively higher each year, as follows: about one billion zlotys for 1946, about 3 billion for 1947, and about 7.5 billion zlotys for 1948.

This indicates the exceptional part played by the chemical industry in any broad plan of Polish economic development. This is not merely a matter of efficient exploitation of the nation's natural resources -- coal, salt, limestone, etc. -- although the abundance of such resources alone should place chemical manufactures first in Poland's industrial production. There are also sound economic reasons for the expansion of the chemical industry. This industry has always been considered one of the especially profitable branches of production. Full amortization of investment outlays within several years has by no means been an exceptional occurrence in many divisions of the chemical industry. This argument must have unusually important significance for a nation like Poland, which undertakes national economic reconstruction on a large scale with its own limited capital resources.

Nor are these all the points in favor of maximum concentration of investment outlays in the chemical industry. A world-wide shortage of chemicals, and in its wake an exceptionally favorable combination of circumstances in trade involving all kinds of chemical products, with the elimination of competition from German industry, creates entirely new horizons for Polish chemical exports. Furthermore, shortages in chemical products affect domestic production, and every increment of chemical production will increase the production of those numerous branches of industry for which chemicals are a basic raw material. Likewise, every investment outlay for artificial fertilizer plants in tantamount to investment in agriculture.

Investment Program in 1948

The following table shows the amount of investment credits allotted in 1948 to the various branches of the chemical industry:

	Million Zlotys
Association of the	
Inorganic Chemical Industry	1,325
Artificial Fertilizer Industry	900
Technical Gas Industry	63
Organic Industry	544
Organic Industry, Rokita Factory	584
Pharmaceutical Industry	425
Coal-Tar-Derivative Industry	890
Rubber and Synthetics Industry	319
Fat-Processing Industry	32
Paint and Varnish Industry	91
Institute of the Chemical Industry	82
Main Office of Investments and Reconstruction	18
State Synthetics Plant, Dwory	1,292
General renovation	762

As in preceding years, the largest sums were allotted for the development of the inorganic industry, especially soda plants (1,068,000,000 zlotys, or 81 percent of the investment credits for the entire inorganic industry). Concentration of such large sums in the soda industry should double soda production in the next 2 years. In this way, the shortage of soda will be wiped out in the domestic market and a substantial surplus will be available for export. In the first quarter of 1948, the inorganic industry will activate a calcium-carbide plant in Bobrek, where production of calcium carbide will reach 18,000 tons annually. Forty-eight million zlotys were assigned for this purpose. A substantial sum (46 million zlotys) will be used for further expansion of a chemical reagents factory in Gliwice.

The impressive sum of 900 million zlotys was allotted for a broad investment program in the fertilizer-processing industry. The largest amount will be used for investment in the factory in Chorzow to increase the production of calcium cyanamide to 440 tons daily, and in the Moscice factory to increase the production of nitrogenous fertilizers to 33,000 tons annually. In 1948, the fertilizer industry is putting into operation a number of new factories, namely, a sulfuric acid and superphosphate factory in Szczecin and a sulfuric acid factory in Kielce. With further expansion of acid-producing plants already in operation, the production of the basic intermediate product, sulfuric acid, should increase threefold during the next 2 years.

In 1948, the Association of the Artificial Fertilizer Industry is preparing plans for the construction of the third large plant for the manufacture of nitrogen compounds, with an allotment of 9,400,000 zlotys for preparatory work. This plant will probably be activated in 1950. Research and test drilling for potassium salts will consume 28 million zlotys, in addition to outlays of 71 million zlotys for this purpose by the Central Administration of Liquid Fuels.

In the organic chemical industry, the largest investments are being made in the Boruta factory in Zgierz, 383 million zlotys, to increase the production of pigments, both as to quantity and variety.

Investments in the large Rokita factory in Brzeg Dolny (584 million zlotys) constitute a separate item. This plant is being rebuilt from the foundations for the production of organic chemical semimanufactures. By 1948, this plant will produce over 20 different basic semimanufactured coal-tar derivatives at an advanced stage of processing, with aggregate 1948 production valued at around 650 million zlotys. This is substantially more than the amount of capital invested during this period.

In the pharmaceutical industry, the most interesting item in the investment program undoubtedly is the construction of a penicillin factory as part of the Spiess Plant in Tarchomin. This project, to be completed in 1948, will result in production of about 120 billion units, which will amply cover Poland's demand for this product. Heavy outlays will also be made in other pharmaceutical factories, including the "Mgr Klave" in Warsaw, 61 million zlotys; the "Dr Wander" in Krakow, 56 million zlotys; Polpharma in Starogard, 43 million zlotys; and Scott and Bowne in Lodz, 32 million zlotys. As a result of these investments, production of pharmaceutical products by 1949 should increase threefold.

In the manufacture of coal-tar derivatives, the largest sum, 211 million zlotys, has been allotted for the extension of Dalgaz pipe lines. The modern coke ovens in Zdzieszowice will be rebuilt at a cost of 204 million zlotys and the Zabrze coke plant will be restored for 163 million zlotys. Total investment outlays in the coal-tar derivative industry will amount to 890 million zlotys. As a result, production of basic products of dry distillation of coal will increase 50 percent in 1948, with a further gain of 30 percent in 1949.

Investments in the rubber industry are concentrated mainly in the Stomil tire factory in Poznan (131 million zlotys), to increase production over 50 percent by 1948. Forty-five million zlotys will be used for the construction of a tire factory in Debica, and 39 million for a synthetic rubber factory in Debica.

The most essential item in the investment program of the paint and varnish industry is the construction of a large new factory of about 5,000 tons' annual productive capacity. To this end, 46 million zlotys were allotted for the current year.

For 1948 reconstruction work at the State Synthetic Plants in Dwory, the imposing sum of 1,291,000,000 zlotys is being transferred to the chemical industry from the Central Administration of Liquid Fuels. In 1948 these plants will already be producing a number of important chemical semimanufactures, such as polyvinyl chloride, a basic intermediate product for the manufacture of simulated leather for industrial and consumption purposes and phenol for the production of synthetic fibers. A division will be activated for the oxidation of paraffin into fatty acids for the food industry and for soap manufacture, etc. In the near future, the production of methanol, synthetic gasoline, and buna will be activated on a large scale.

Briefly summarized, 1948 investments in the chemical industry will result in a substantial increase in the production of basic raw materials, the activation of numerous new divisions for the manufacture of products not made before the war, and the construction and activation of ten new plants.

To take full advantage of the relatively high sum of 7.5 billion zlotys, or rather, over 8 billion, which resulted from a carry-over of unused credits from 1947, intensive efforts will be demanded of the investment departments of factories, associations, and the Central Administration. Their task is especially difficult, since more than half of the investment projects and almost all the reconstruction work must be carried out by the plants' own personnel. Another factor is the great difficulty encountered in the delivery of investment goods, whether of domestic origin or imported.

Nevertheless, the results achieved up to this time in the reconstruction of the chemical industry (it is sufficient to cite the example of Moscice, rebuilt from materials partially classified as "scrap") give ample grounds for the conviction that the chemical industry will also meet its 1948 investment program.

CENTRAL ADMINISTRATION OF THE CHEMICAL INDUSTRY

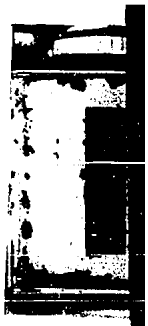
Gliwice, Sowinskiego 11 Telephone: 39-43, 37-05, 26-73

The following are under the jurisdiction of the Central Administration of the Chemical Industry:

1. Association of the Inorganic Chemical Industry, Gliwice, Gornych Walow 25, telephone 46-34, telegraphic code Nieorganiczny

2. Association of the Artificial Fertilizer Industry, Gliwice, Gornych Walow 28, telephone 25-34, telegraphic code Nawogas

3. Association of Industrial Gas Manufactures, Dabrowka Mala near Katowice, Dabrowskiego 2, telephone 241-35



4. Association of the Organic Chemical Industry, Lodz, Sienkiewicza, telephone 197-35

5. Association of the Pharmaceutical Industry, Krakow, Lenartowicza 13, telephone 560-93

6. Association of the Coal-Tar-Derivative Industry, Zabrze, Zamkowa 1 (Biskupice), telephone 34-61, telegraphic code Koksochemia.

7. Association of the Rubber and Synthetics Industry, Lodz, Sienkiewicza 55, telephone 196-35, telegraphic code Zetpege

8. Association of the Fat Processing Industry, Warsaw, Krakowskie Przedmiescie 7, telegraphic code Tluszczowe

9. Association of the Paint and Varnish Industry, Gliwice, Studzienna 8, telephone 43-54, telegraphic code Farbolak

10. Institute of the Chemical Industry, Warsaw-Zoliborz, Lacznosci 8

11. Chief Bureau of Investments and Reconstruction, Gliwice, Swyciestwa 19, telegraphic code Gebeo

12. Central Office of Supply for the Chemical Industry, Gliwice, Radiowa 2

13. Central Marketing Office of the Chemical Industry, Warsaw, Mlodziezy Jugoslowianski 18, telephone 883-16, telegraphic code Chemia

14. Commission of the Central Administration of the Chemical Industry, Warsaw, Lwowska 18, telephone 885-36

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